L15 ANSWER 8 OF 12 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2000:874973 HCAPLUS
DN 134:273389
TI Photodeposition of tantalum pentoxide film using 222 nm excimer lamps
AU Zhang, J.-Y.; Hopp, B.; Geretovszky, Z.; Boyd, I. W.
CS Electronic & Electrical Engineering, University College London, London, WC1E 7JE, UK
SO Applied Surface Science (2000), 168(1-4), 307-311
CODEN: ASUSEE; ISSN: 0169-4332
PB Elsevier Science B.V.
DT Journal
LA English
CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 73
AB The authors report the growth of thin tantalum pentoxide films on Si (1 0 0) and quartz by photoinduced chem. vapor deposition (photo-CVD) using a 222 nm excimer lamp. The properties of the films formed have been studied using ellipsometry, UV spectrophotometry, Fourier transform IR spectroscopy (FTIR) and at. force microscopy (AFM). It was found that the films can be deposited at substrate temps. as low as 25.degree.. The kinetic study of the reaction processing indicated that at low deposition temps. between 25 and 100.degree., the deposition process is a condensation-controlled mechanism while at high deposition temps. between 100 and 400.degree. a reaction-controlled mechanism is dominant during the growth with an activation energy of 0.08 eV, which is much lower than that of 2.2 eV for thermal-CVD processing. The influence of the deposition temp. on the film properties and its optimization are discussed. At temps. >100.degree. the film thickness increased with temp. while it decreased as the temp. is <100.degree.. The refractive index and the optical band-gap of the films were around 2.09.+-.0.05 and 4.10.+-.0.05 eV, resp., while an optical transmittance between 85 and 98% in the visible region of the spectrum was obtained at different thicknesses.
IT **1314-61-0P**, Tantalum pentoxide
RL: PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(growth and properties of tantalum pentoxide film on Si and quartz by photoinduced chem. vapor deposition)
RN 1314-61-0 HCAPLUS
CN Tantalum oxide (Ta2O5) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **172901-22-3**
RL: RCT (Reactant); RACT (Reactant or reagent)
(precursor; growth and properties of tantalum pentoxide film on Si and quartz by photoinduced chem. vapor deposition)
RN 172901-22-3 HCAPLUS
CN Tantalum, [2-(dimethylamino-.kappa.N)ethanolato-.kappa.O]tetraethoxy-, (OC-6-23)- (9CI) (CA INDEX NAME)